UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,802	03/08/2002	Vladimir Moravek	33810F006	3397

7590 09/25/2003

Frederick F. Calvetti
Smith, Gambrell & Russell
1850 M Street, N.W.
Washington, DC 20036

EXAMINER	
JOLLEY, KIRSTEN	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,802	MORAVEK ET AL.	
	Examiner	Art Unit	
	Kirsten Crockford Jolley	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *1-8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of Group II, claims 9-15, in the paper filed August 21, 2003 is acknowledged. The traversal is on the ground(s) that, while the groups of claims are separately classified, they necessarily must be searched and examined together. Searching for the material or searching for the process requires essentially the same areas of search. This is not found persuasive because the considerations used for examining method claims are different than those used for examining composition claims. Composition claims are examined based solely on the properties of the composition itself, not on the intended use of the specific composition. When examining a claim directed to a method of coating, it is necessary to find the process steps of the coating method. However, when examining claims directed to a coating composition, the applicable art includes art directed to the composition used in any method or on any substrate. Applicable art for a method of coating do not necessarily encompass all the fields of searched required for composition claims and therefore there is an additional burden on the Examiner. In addition, it is the Examiner's position that there is a burden based on the different issues that arise in examining method claims versus composition claims.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

2. Claim 12 is objected to because of the following informalities: In claim 12, line 2, it appears that "1.1" should be --1:1-- since the number represents a ratio, and since the specification teaches a ratio of 1:1 on page 8, line 5. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is vague and indefinite because it is not clear whether the "other elemental alloying additions" contained in the coating are separate elemental particles, or whether they are other elements that are additionally alloyed with the aluminum or aluminum alloy particles. The specification does not clarify the claim because it states that both scenarios are possible at page 11, lines 11-17. For the purpose of examination, claim 10 has been interpreted as being inclusive of either additional elemental alloying powders or additional elemental alloy materials in the aluminum-containing powders.

Claim 11 contains the trademark/trade name "Benjamin-Moore M66-79 silicone alkyd high heat aluminum paint." Where a trademark/trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 USC 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used

properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a silicone alkyd paint and, accordingly, the identification/description is indefinite.

Claims 12-15 are rejected because they do not correct the deficiencies of claim 11.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Mosser et al. (US 6,171,704).

Mosser et al. discloses a method for coating a lipskin or a part within the nacelle (enclosure of the engine) on an aircraft (col. 1, lines 19-27 and col. 5, lines 25-35). It is the Examiner's position that since the nacelle covers the aircraft's turbine engine, and because it is exposed of temperatures of up to 232 C during deicing (col. 1, lines 59-67), it meets Applicant's limitation of a "turbine part which is subjected to high temperature operation during its life." Mosser et al. teaches a process of providing a protective coating to the lipskin or nacelle comprising the steps of: cleaning the part (col. 9, lines 25-32), coating the part with a first base

coating, and then coating the part with a second top coating. Mosser et al. teaches that the top coat may comprise a silicone paint with aluminum flake pigment (col. 5, lines 61-62), and more specifically that the silicone paint may be a silicone alkyd paint (col. 7, lines 7-10). Since the top coat of Mosser et al. includes both a resin and particulates, it necessarily is a slurry-type coating. It is noted that the claims do not require that the coating comprising silicone alkyd carrier and aluminum particles is applied directly to the substrate surface; the "comprising" language is open-ended and broadly includes additional ingredients and/or process steps.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mosser et al. (US 6,171,704).

As to claim 11, Mosser et al. lacks a teaching that the aluminum flake particles have a particle size of about 350 mesh, or that the silicone alkyd paint carrier is specifically Benjamin-Moore M66-79 silicone alkyd high heat aluminum paint. The specific trademarked paint, Benjamin-Moore's "M66-79" is rejected under 35 USC 112, 2nd paragraph as discussed above. It is the Examiner's position that if the particle/flake size is too small then there would not be enough surface area to provide the pewter color or dulling effect, and if the particle sizes are too big then they might protrude from the surface of the coating (col. 7, lines 39-41 and 46-48). It is

well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

As to claim 12, Mosser et al. also does not teach a ratio of paint to powder of 1:1. Mosser et al. discloses that the amount of aluminum flake in the top coat compositions may vary. It would have been obvious for one having ordinary skill in the art to have determined the optimum amount of aluminum flake as a matter of design preference in order to provide a desired pewter color in order to match the anodized aluminum thereunder and to reduce the gloss of the paint by a desired amount.

9. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spadafora (US 4,960,817) alone or in view of Joseph (US 3,102,044).

Spadafora discloses a method for coating a turbine part which is subjected to high temperature operation during its life comprising coating the part with a slurry containing aluminum particles and a silicone alkyd co-polymer resin as part of the carrier (the carrier is a blend of two resins - a silicone resin and a silicone alkyd co-polymer resin). The Examiner notes that the term "paint" as used in line 7 of claim 9 is a broad term interpreted as meaning any material that may form a film. While Spadafora does not specifically teach that a commercially available silicone alkyd is used in the carrier, it would have been obvious for one having ordinary skill in the art to have used a commercially available silicone alkyd resin/paint because Spadafora does not provide instructions for making the silicone alkyd resin itself.

Spadafora lacks a first step of cleaning the substrate part prior to coating. The Examiner notes that cleaning a substrate prior to coating is a well known process step in the coating art. Cleaning removes any debris, dust/particulates, or chemicals on the substrate surface because the presence of such materials on the substrate surface would cause a decrease in adhesion between the coating and substrate. It would have been obvious for one having ordinary skill in the art to have cleaned the turbomachinery part of Spadafora prior to coating in order to increase the adhesion between the coating and the substrate.

Alternatively, Joseph is cited for its method of applying a high temperature corrosion-preventive coating to a metal substrate including a first step of cleaning the substrate surface (col. 2, lines 41-47). It would have been obvious for one having ordinary skill in the art to have cleaned the turbomachinery part of Spadafora prior to coating, as taught by Joseph, in order to increase the adhesion between the coating and the substrate.

As to claim 10, Spadafora teaches that zinc dust may be added to the coating composition.

As to claim 11, Spadafora states that the average particle size of the leafing aluminum is around 25 microns, however it is not known whether this meets Applicant's limitation that the aluminum particles have a particle size of about 350 mesh. It is noted that the stated aluminum particle size of Spadafora is an average size, and thus particles both bigger and smaller than the stated size are used. It is the Examiner's position that if the aluminum particle size is too small then there would not be enough surface area to overlap and provide a physical barrier against corrosion, and if the particle sizes are too big then they might protrude from the surface of the coating (col. 7, lines 39-41 and 46-48). It is well settled that determination of optimum values of

cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). The specific trademarked paint, Benjamin-Moore's "M66-79" is rejected under 35 USC 112, 2nd paragraph as discussed above.

As to claim 12, Spadafora teaches that the combined amount of resins/carrier is in the range of 16.4-17.2% by weight and the amount of leafing aluminum is 5.8-19.7% by weight (Table in col. 2). The range of possible ratios of silicone resin to aluminum are inclusive of the claimed ratio of 1:1. Additionally, it is noted that if too little aluminum is used, then adequate corrosion protection will not be provided, however one would also be motivated to minimize the amount of aluminum for economic reasons and depending upon the desired thickness of the coating. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

10. Claims 13-15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. It is noted that while Spadafora and Mosser et al. both teach curing steps of their coatings comprising silicone alkyd resin and aluminum particles, Mosser et al. teaches a maximum curing temperature of 190 °C (col. 7, lines 23-24) and Spadafora teaches curing during the part's first use at 500-700 °F, or 260-371 °C. Neither Spadafora nor Mosser et al. teach or fairly suggest heating in the presence of an inert gas at about 840 °C to form a diffused coating, and further heating in a vacuum furnace at about 1080 °C to

diffuse-bond the coating to the turbine part. To the contrary, both Spadafora and Mosser et al. discuss the thermal stability of the silicone alkyd resin at the high temperatures encountered during the use of the coated product, and also teach the desire to overlap aluminum particles/flakes in the coating to provide protection and/or aesthetic qualities, therefore Spadafora and Mosser et al. do not teach or fairly suggest the diffusion of the aluminum into the substrate surface (or the carrier being driven off during the claimed high temperature heat treatment).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Supcoe (US 4,311,623) and Supcoe et al. (US 4,289,677) both disclose coatings comprising silicon alkyd resin and aluminum particles, however the coatings do not disclose a heat treatment step.

Joseph (US 3,102,044) is cited for its teaching of a coating comprising aluminum or aluminum/silicon alloy particles in a slurry and performing a heat treatment at high temperatures sufficient to cause diffusion and driving off the carrier. However, Joseph lacks a teaching or motivation for selecting a silicone resin, particularly silicone alkyd resin, as the carrier (col. 3, lines 18-21).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 703-306-5461. The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

Kirsten C. Jolley
Patent Examiner
Technology Center 1700

kcj